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AT9-98-441

PATENT

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

| | | |
|-----------------------|-----------------|---------------------------|
| In re application of: | : | Examiner: |
| Chao et al. | : | Fleurantin, J. |
| Serial No.: | 09/282,907 | : |
| | | Group Art Unit: 2172 |
| Filed: | March 31, 1999 | : |
| | | IBM Corporation |
| | | Intellectual Property Law |
| Title: | ERROR DETECTION | : |
| | PROTOCOL | : |
| | | 11400 Burnet Road |
| | | Austin, Texas 78758 |

August 12, 2002

REPLY BRIEF

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Box AF
Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

This Reply Brief is being submitted in response to the Examiner's Answer dated July 16, 2002 (Paper No. 13), with a two-month statutory period for response set to expire on September 16, 2002.

CERTIFICATION UNDER 37 C.F.R. § 1.8

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to Box AF, Assistant Commissioner for Patents, Washington, D.C. 20231, on August 12, 2002.


Signature

Serena Beller

(Printed name of person certifying)

I. RESPONSE TO EXAMINER'S RESPONSE TO APPELLANTS' ARGUMENTS

- A. San Andres does not teach or suggest "each node in the computer cluster voting based on a functional outcome of the database update request" as recited in claim 1.

In the Examiner's Answer, the Examiner states that "San Andres includes the steps of each time an update transaction is dispatched by the arbiter the arbiter monitors the outcome 'success or failure' of the transaction on each server by checking the status codes returned by the server, which is readable as detecting an out-of-sync condition as a result of a different functional outcome, see col. 19, lines 43-46. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teaching of San Andres with the step of each node in the computer cluster voting based on a functional outcome of the database update request. This modification would allow the teachings of San Andres to improve the accuracy of the error detection protocol." Examiner's Answer, Page 11.

The Examiner has not provided a proper motivation for modifying San Andres. The Examiner must submit **objective evidence** in support of modifying San Andres. *In re Lee*, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002); *In re Kotzab*, 55 USPQ2d 1313, 1316-1317 (Fed. Cir. 2000). Instead, the Examiner simply relies on his own subjective opinion as support for modifying San Andres which is insufficient. *Id.* The Examiner simply states that by modifying San Andres with the above limitation that it improves the accuracy of the "error detection protocol" which happens to be the title of Appellants' application. No where does San Andres discuss or use the terms "error detection protocol." This is an improper motivation provided by the Examiner. Accordingly, one ordinarily skilled in the art would not be capable to re-create claim 1 in view of the cited prior art.

- B. San Andres does not teach or suggest "*refreshing the database in response to the detecting step*" as recited in claim 3.

The Examiner states that "because San Andres includes the step of when an application server of a service group receives a client request that indicates a modification to replicated service content data the server generates an update transaction and sends the update transaction to the arbiter, which is readable as refreshing the database in response to the detecting." Examiner's Answer, Page 11. As interpreted by the Appellants, San Andres simply teaches that when the application server receives a request to modify the replicated service content data, the application server generates an update transaction. *However, the application server does not generate the update transaction in response to detecting an out-of-sync condition as a result of a different functional outcome.* The application server simply receives a request to modify the replicated service content data from a client. Accordingly, one ordinarily skilled in the art would not be capable to re-create claim 3 in view of the cited prior art.

- C. San Andres does not teach or suggest that "*the out-of-sync condition is an error*" as recited in claim 2.

The Examiner states that "San Andres includes steps of the arbiter uses a majority rules voting scheme under the majority rules scheme, if the majority number servers of the service group report a different outcome than others servers the majority servers are treated as being inconsistent with final outcome and taken off line; which is readable as the out-of-sync condition is an error." Examiner's Answer, Pages 11-12. As interpreted by the Appellants, San Andres teaches that an Arbiter may use a voting scheme to decide which application servers are deemed to be consistent and take application servers that are inconsistent off-line for maintenance. As interpreted by the Appellants, San Andres simply teaches an Arbiter using a scheme to determine which servers are

taken off-line but does not teach detecting an out-of-sync condition that is an error. Accordingly, one ordinarily skilled in the art would not be capable to re-create claim 2 in view of the cited prior art.

- D. San Andres does not teach or suggest "voting, by all of the other nodes in the computer cluster, to approve update if a match results from the comparison" as recited in claims 9 and 21 and similarly in claim 15.

The Examiner states that "San Andres includes the step that whenever the arbiter replicates a transaction the arbiter monitors the outcome of the transaction on each server of the service group to ensure consistent processing of the transaction by all such servers, when one or more servers indicates a different outcome than the other servers of the service group the arbiter uses a voting scheme to resolve the conflict between the servers a preferred voting scheme is described below under the heading status codes and conflict resolution; which is read as voting, by all of the other nodes in the computer cluster, to approve update if a match results from the comparison; see col. 17, lines 10-19." Examiner's Answer, Page 12. San Andres further teaches that "when one or more servers 120 indicates a different outcome than the other servers of the service group, the Arbiter uses a voting scheme to resolve the conflict between the servers." Column 17, Lines 14-17. As interpreted by the Appellants, San Andres simply teaches an *Arbiter* that may *use a voting scheme to decide which application servers are deemed to be consistent and take application servers that are inconsistent off line for maintenance*. Consequently, San Andres does not teach or suggest *voting by all of the other nodes in the computer cluster* to approve update if a match results from the comparison. Accordingly, one ordinarily skilled in the art would not be capable to re-create claims 9, 15 and 21 in view of the cited prior art.

- E. San Andres does not teach or suggest "comparing, by all of the other nodes in the computer cluster, the update results to results of application of the update to the local copy of the database" as recited in claims 9 and 21 and similarly in claim 15.

The Examiner states that "San Andres includes the steps of the arbiter replicates service content data by dispatching atomic transactions 'which are generated by the arbitered services' to groups servers 120 these transactions are in the form of update commands (referred to herein as 'update transactions') which when interpreted by the receiving service applications typically specify an update to a specific data entity or set of data entities each server 120 which receives the update transaction from the arbiter processes the transaction, which normally involves updating the server's locally-stored service content data; which is readable as comparing, by all of the other nodes in the computer cluster, the update results to results of application of the update to the local copy of the database; see col. 16, lines 50." Examiner's Answer, Page 13. As interpreted by the Appellants, San Andres teaches that a server may receive an update transaction from the Arbiter to update the server's locally-stored service content data. However, San Andres does not teach that *all of the other nodes in the computer cluster compare* the update results to results of application of the update to the local copy of the database. Furthermore, San Andres does not teach that all of the other nodes in the computer cluster compare the *update results to results of application of the update to the local copy of the database*. Accordingly, one ordinarily skilled in the art would not be capable to re-create claims 9, 15 and 21 in view of the cited prior art.

- F. San Andres does not teach or suggest "broadcasting an approval of the update to the database if all of the other nodes vote to approve the update" as recited in claims 11, 22 and similarly in claim 17.

The Examiner states that "San Andres includes the steps of when a new application server is brought on line previously dispatched update transactions stored in the transaction log are dispatched in sequence to the new server to bring the new server's content data up to date, which is

readable as broadcasting an approval of the update to the database if all of the other nodes vote to approve the update; see abstract, lines 16-20." Examiner's Answer, Page 13. As interpreted by the Appellants, San Andres teaches dispatching update transactions to the new server to bring the new server's content data up to date. However, San Andres does not teach or suggest *broadcasting an approval of the update to the database*. Furthermore, San Andres does not teach or suggest broadcasting an approval of the update to the database *if all of the other nodes vote to approve the update*. Accordingly, one ordinarily skilled in the art would not be capable to re-create claims 11, 17 and 22 in view of the cited prior art.

G. Other Matters Raised by the Examiner

All other matters raised by the Examiner, e.g., Examiner's reliance on *In re McLaughlin*, Examiner's assertion to give claim limitations their broadest reasonable interpretation, have been adequately addressed in Appellant's Appeal Brief and therefore will not be addressed herein for the sake of brevity.

H. Comments

It is noted that words are italicized only for emphasis. Words that are italicized are not meant to imply that only those words are not taught or suggested in the cited prior art.

II. CONCLUSION

For the reasons stated in Appellants' Appeal Brief and noted above, Appellants respectfully assert that the rejection of claims 1-25 is in error. Appellants respectfully request reversal of the rejections and allowance of claims 1-25.

Respectfully submitted,

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